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BIDS ON TORPEDO BOATS.

Bids were opened at the Navy Department, Friday, September 18, for building torpedo boats, details of the specifications for which appeared in THE RECORD, July 16. The act made provision for three thirty-knot torpodo boats, and as many smaller boats, not to exceed ten, as can be obtained for $500,000. Eleven firms submitted proposals, but while Congress specially provided for favorable consideration of bids from the Gulf and Mississippi Valley, not a single proposal came from either section of the country. The bids were as follows:

Union Iron Works, San Francisco, $227,500 for one 273-ton boat.

Bath, Me., Iron Works—Two at $194,000 each, of 147 tons displacement, or $189,000 each for three; also two 230-ton boats, 30 knots, at $235,000 each, agreeing to guarantee 30½ knots under a penalty of $10,000 per knot. The company offered to build 22½-knot boats on their own plans at $85,000 for one, and three for $80,000 each; and 25-knot boats, their own plans, for one, $113,000, and for three, $103,560 each. They offer to build the hulls of Hyde bronze at an advance of $10,000 to $15,000 on each boat. This company would build the boats on the famous Thornycroft models of hull and boiler, which have accomplished such fine results in England.

The Herreshoff Manufacturing Co. Bristol, R. I.—One 225-ton 30-knot boat for $218,000, and three for $206,000 each; one 20-knot boat for $40,000, or $37,500 each for three; one 22½-knot boat for $84,000, or three for $240,000. They offer an exact duplicate of the Cushing, 22½ knots, for $92,500; or a general duplicate, modified in details, for $82,500, or $78,500 each for two.

John H. Dialogue & Son, Camden, N. J.—One 30-knot boat for $260,000 or $275,000, according to design, and two for $255,000 to $270,000 each; one 23-knot boat of their own design, $120,000, or $115,000 each for two; one 20-knot boat, department's plans, $69,250, or $68,500 for each of two.

Columbian Iron Works, Baltimore—Twenty-knot, 65-ton boats, department plans, $48,000 each, for either one or three; their own plans, $45,000 each; 22½-knot boats, $79,000 each, and various combinations of these figures.

Moran Bros. & Co., Seattle, Wash.—Twenty-knot, 65-ton boats, $59,840 for one, or $56,928 for each of three, department plans; or $58,240 for one, or $52,328 each for three, on their own plans; for 22½-knot boats, $99,216 for one, and $94,255 each for three; and various other combination bids.

Wolff & Zewicker, Portland, Ore.—Twenty-knot, 65-ton boats, one for $49,500, or three for $45,000 each; 22½-knot boats, their own plans, $83,800 for one, or $75,100 each for three.

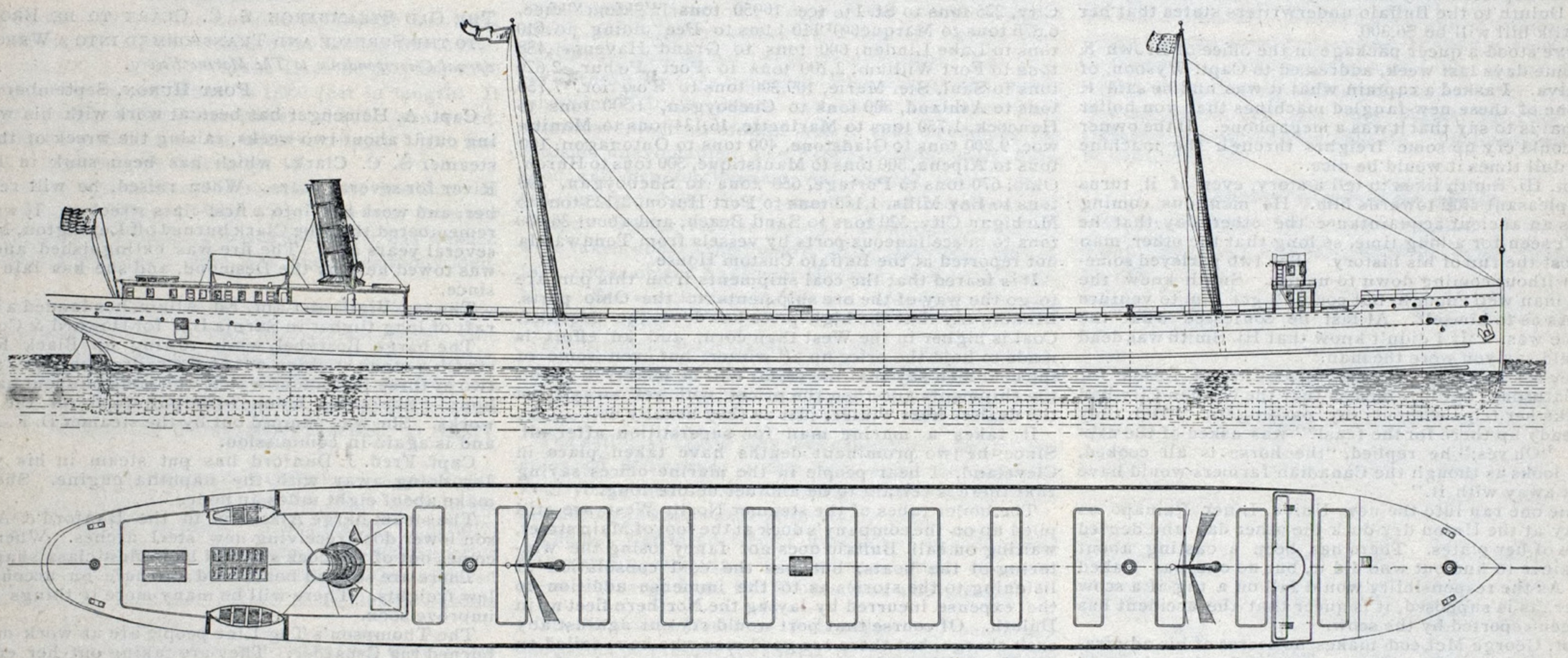
Providence Steam Engine Co., Providence R. I.—Twenty-knot boats, two for $51,600 each, or three for $48,650 each.

Crescent Shipyard, Elizabeth, N. J.—Twenty-knot boats, one for $69,000, or two for $68,000 each.

Charles Hillman Ship and Engine Building Co., Philadelphia—Twenty-knot boats, one for $48,000, or two for $45,500 each.

George Lewy & Son, South Boston—One 22½-knot boat, 80 tons, for $83,500, two for $80,000 each, and three for $78,800 each, department's plans; 20-knot boat, 65 tons, on their own plans, $61,500 for one, $57,625 for two, and 56,835 for three. On a third set of plans they offer to build one 20-knot boat for $61,000, and one 22½-kuot boat for $101,250, and also make combinations on these bids.

The Navy Department has until October 8 to award the bids.



BESSEMER S. S. CO.'S STEAMSHIP JAMES WATT
Launched at Cleveland Shipyard Wednesday.

REGRETS FOR THE LATE CAPT. WEBB.

A largely attended meeting of ship owners and brokers, ore and coal men, and others connected with lake trade was held in the offce of General Counsel H. D. Goulder, of the Lake Carriers' Association, Mr. W. D. Rees, of the Lake Superior and Republic iron companies, presided and opened the meeting with few feeling remarks. He was followed by Capt. Thomas Wilson, B. L. Pennington, Capt. J. H. Palmer, W. G. Mather, Capt. Thomas Adams, of Detroit, H. D. Goulder, and by President J. H. H. Brown, of the Lake Carriers' Association. The committee, which had been appointed at a previous meeting presented the following resolutions which were at once adopted:

"There is no man connected with lake commerce today who did not know Henry J. Webb; those are few, indeed, who cannot remember him as a leading figure in marine circles at the beginning of their own experience.

"In 1856 Mr. Webb saw the impossibility of correctly and promptly dispatching the business without the assistance of brokers, who should furnish tonnage to shippers and cargoes to vessels, and he established an agency of this character. The utility of the innovation was at once seen and appreciated, and it was but a short time when substantially all the business of the lakes was done through such agencies, the office of Mr. Webb doing from the beginning, perhaps, the largest business of that character.

"Thoroughly conversant with the business, master of every detail, he was a veritable reservoir of information upon everything pertaining to lake transportation, and besides was possessed of remarkable foresight, tact and judgment. His recourse to extricate himself or a friend from difficulty or loss in an extreme situation was as remarkable as his self-control and cheerful demeanor often displayed under the most trying circumstances. His advice and aid were constantly sought and freely granted all, and he will be held in grateful memory by many who, in seasons of depression and trouble and loss, have been comforted and upheld by his sympathy and aid. Always progressive, he was at the front in all changes which have marked the development of lake commerce. His death has ended a singularly active and useful career, the effect of which will continue to be seen on every side, while his kind and unselfish acts and his genial, helpful presence among us for so many years will long abide in our memory.

"We mourn his loss as that of an intimate, respected and true friend, and direct that a copy of this memorial be furnished the afflicted family, to whom we extend our heartfelt sympathy in their bereavement."

Among the out-of-Cleveland marine men present, besides those mentioned above, were Capt. Cyrus Sinclair, of Chicago, and P. J. Ralph, of Detroit.

NEWS AROUND THE LAKES.

BUFFALO.

A BIG WEEK IN GRAIN AND LUMBER RECEIPTS—HELD BACK BY THE POLITICAL SITUATION—GOOD GOSSIP.

Special Correspondence to The Marine Record.

BUFFALO, Sept. 22, 1896.

Last week began with grain and ended with lumber. Such a list of big fellows as we began last week with. There were the Appomattox and Oglebay, never here before, and the Maritana, Mariska, Manola, Masaba, Marcia, Rees, and a dozen smaller craft, all with grain. There were five that had over 750,000 bushels of grain on board alone. Then the scene changed, but not soon enough to prevent the week being the heaviest for grain receipts of the season since the first Chicago fleet came in. But there is a decided falling off in the business now, both at Chicago and at Duluth and the total this week may be small.

No sooner had the grain fleet begun to subside than the lumber boats began to pile in. The greater part of them went down the river to Black Rock or Tonawanda, but there was about 5,000,000 feet afloat here last Saturday. This was a mere bunching of the barges, for there is no indiction yet that the demand for lumber carriers is to be large as was the case last fall, when freights were crowded up so high that considerable lumber was left at the mills all winter.

The fact is, our lumbermen are afraid. They are not putting in much of a stock. Money is so hard to get that it is risky to sell stock when one has it and unless the election releases it there is going to be slow business all winter, and if it does it will be to late to stock up much lumber, as some of the dealers would like to do at the last moment if McKinley is elected. This sort of talk is not politics this year, but plain business.

The condition of the big steamer Rees, which was not supposed to be hurt much in getting on the bottom coming down, is a fair sample of what is to be expected every time when a steel boat strands. It happened with the steamer H. H. Brown, which went on at the Sault and was reported very little injured. Now a dispatch from Duluth to the Buffalo underwriters states that her dry-dock bill will be $6,300.

There stood a queer package in the office of Brown & Co. some days last week, addressed to Capt. Wysoon, of the Alva. I asked a captain what it was and he said it was one of these new-fangled machines that you holler in—that is to say that it was a megaphone. If the owner of it could cry up some freights through the machine these dull times it would be nice.

Capt. Hi. Smith likes to tell a story, even if it turns its unpleasant side towards him. He mentions coming across an ancient acquaintance the other day that he hadn't seen for a long time, so long that the other man had lost the run of his history. The two parleyed sometime without coming down to names. Smith knew the other man well enough, but couldn't get him to venture a guess as to himself. At last he confessed what the trouble was. "If I didn't know that Hi. Smith was dead I should say you were the man."

They set up a free barbecue up at Crystal Beach for last Saturday, but it rained so that the Garden City had to make her trips without any passengers. "Did they get ready up there for the feast?" was asked of the captain. "Oh yes;" he replied, "the horse is all cooked, but it looks as though the Canadian farmers would have to get away with it."

Some one ran into the new Union Liner Ramapo as she lay at the Union dry-dock the other day and dented in one of her plates. There has been a casting about ever since to find out who did it, but no one has leaked yet. As the responsibilty would fall on a tug if a scow hit her, as is supposed, it is queer that the accident has not been reported by the scow.

Capt. George McLeod makes no secret of his admiration of a good ocean skipper, even if he does have to make some comparisons. "When I went to Prince Edward Island this summer," said he, the other day, "I sailed out of New York in a fog so thick that not one of the passengers on the steamer saw a thing overboard till we were within a hundred feet of the dock in Halifax. The course is not only crooked, but it lies through the Bay of Fundy with its heavy currents. There is a sharp turn in the Bay, but it was made to a to nicety and we made the whole course by exact science. The lead line was in use when we made the bottom at 100 fathoms. When we reached destination I bought the captain a bottle of wine. The steamer was about the size of the Tioga. When I find our lake captains going ashore the minute they have to run a course after dark, no matter how familiar they may be with it, I am disgusted."

There are, of course, captains and captains, on the lakes as well as on the ocean; and this leads to the advocacy from some quarters of a classification of them according to their record. The plan has been talked of more or less for some time, but the authorities appear to lack the nerve necessary to put it in force, or at least that is the reason given by some who are urging it. Of course it would be more or less unpopular with the captains themselves, but it must be acknowledged that the condition of things is rapidly changing. The lake vessels that are worth away up above $150,000 are getting to be many. I took up a port list in one of the lake dailies at random while writing this item and made a rough classification of the vessel mentioned. There was an even 30 in all, of which six were first-class size and the rest were evenly devided between what may be called large second class and smaller. There were only four really small vessels in the list and but one canal schooner. "When I see certain captains turning up time and again the victim of the very same accident," said an advocate of the classification plan, "while others stay afloat." I am ready to do almost anything to increase the the skill of sailing masters." The difficulty now is that vessels are so well insured against all sorts of accidents that about all a captain has to do is to make a break from one port to another and get there as soon as he can.

Government Engineer Symons last week opened bids for the drill and dredge work still to be done at Strawberry Istand in Niagara River. There is available $50,000 for this work, which is to be expended in contracts by the day as the nature of the bottom is so variable that no estimate of it can be made. The bid of Hingston & Woods, $76 a day for drill boat, $74 for dredge, and $18 for tug, was lowest. W. J. Daly of Ogdensburg was the only other bidder. The Buffalo Dredging Company was a few minutes late and its bid had to be ruled out. The breakwater repair work is proceeding favorably under the contract of C. A. Dennis and when he stops this fall it will be in fine shape again, with the whole length of it ready for the fall and winter storms. Major Symons is lately back from Oswego, where he formed part of a board of engineers to make the recommeudations in regard to breakwater extension and repairs and dredge work.

Shipments of coal westward by lake for August were 343,236 tons, as compared with 319,860 tons in 1895, and 253,988 tons in 1894; for the season to Sept. 1, 1,237,034 tons have been shipped, an increase of 87,345 tons as compared with 1,149,680 tons in 1895, and a decrease of 62,033 tons from 1894, when compared with the 1,296,067 tons shipped during the corresponding period of that season. Tte distribution of the coal shipped thus far this season to August 29 was to the following places: 486.175 net tons to Chicago, 338.445 tons to Milwaukee, 141,660 tons to Duluth, 13,925 tons to Racine, 17,800 tons to Green Bay, 4,490 tons to Kenosha, 200 tons to Oscoda, 8,795 tons to Bay City, 12,245 tons to Saginaw, 38,280 tons to Toledo, 700 tons to Detroit, 400 tons to Marine City, 225 tons to St. Ignace, 2,050 tons to Menominee, 6,875 tons to Marquette, 110 tons to Pequaming, 10,610 tons to Lake Linden, 600 tons to Grand Haven, 8,488 tons to Fort William, 2,100 tons to Port Arthur, 2,670 tons to Saul, Ste. Marie, 109,300 tons to Superior, 7,750 tons to Ashland, 800 tons to Cheboygan, 4,100 tons to Hancock, 1,750 tons to Marinette, 16,134 tons to Manitowoc, 9,200 tons to Gladstone, 400 tons to Ontonagon, 100 tons to Alpena, 300 tons to Manistique, 500 tons to Huron, Ohio, 670 tons to Portage, 650 tons to Sheboygan, 300 tons to Bay Mills, 1,150 tons to Port Huron, 2,125 tons to Michigan City, 320 tons to Sand Beach, and about 36,000 tons to miscellaneous ports by vessels from Tonawanda not reported at the Buffalo Custom House.

It is feared that the coal shipments from this port are to go the way of the ore shipments to the Ohio ports. Brokers say that the high price has done the mischief. Coal is higher in the West than corn, and an effort is made to hold the price up all winter; but even some of the coal men say that the result will be merely to cut off the shipments and then the prices will get away from the dealers next winter, just as they usually do.

It takes a marine man for superstition after all. Since the two prominent deaths have taken place in Cleveland, I hear people in the marine offices saying that there is certain to be another before long.

The boiler tubes of the steamer North West are still piled up on the company's dock at the foot of Main street, waiting on call. Buffalo does not fancy losing the wintering of the boats, but has the cold consolation of listening to the stories as to the immense addition to the expense incurred by laying the Northern fleet up in Duluth. Of course that port would cry out against any such charge, but there are good men who have sailed on the North West who are saying that it was lack of experts to lay her up last winter that has a good deal to do with the way she has behaved this summer.

As yet very few boats have laid up here. Seven or eight will about cover the entire list. CHAMBERLIN.

DETROIT.

MR I. G. SOWTER SUCCEEDS MR. PENTON AT HODGE'S—OCEANICA ABANDONED TO THE UNDERWRITERS.

Special Correspondence to The Marine Record.

DETROIT, Sept. 23.

Mr. I. G. Sowter, formerly connected with the Cleveland Ship Building Co., has assumed his duties as superintendent for S. F. Hodge & Co., of this city. That firm reports repairs as well as new work very dull.

H. W. Baker is keeping an eye on the William Crosthwaite until his claim for wrecking is settled. The Crosthwaite's cargo has been sold to J. & T. Hurley.

C. W. Norton was 94 bushels short on his last trip to Buffalo with the Mongaugon. The way freights are now, this robs the trip of all profit.

The fishing this fall in the upper end of Lake Erie is very poor, scarcely enough is being caught to pay for fishing.

Detroit vessel men are now convinced that no betterment in freights will take place this fall. So many theories have been advanced, so many opinions expressed and so much random talking has been done that vessel men are, many of them, refusing to express themselves. One man summed it up thus: "We have spent years of time and much money in acquiring our knowledge of running boats, yet we are frequently told that this or that way would be better. Now the fact is, running boats is a business that requires an intimate knowledge of matters to do successfully."

There seems to be a disposition among some vessel owners to doubt the lengthening of the S. S. Curry to 500 feet. But one of her owners, Waldo A. Avery, said: "If we can make satisfactory arrangements for money we will both lengthen her and build a consort 450 feet long, the two to carry approximately 15,000 tons.

Mr. Avery also said: "The papers claim the boats are laying up. It is not true. Of course some are laying up, but the great mass of tonnage remains intact. Interests are so conflicting that any agreement to pool boats is almost an impossibility. A great many men do not want to pool their boats. They greatly prefer taking their chance and running where they see the most money is to be made." C. W. Norton said: "Never in a lifetime will such a year as this occur again. I never saw one like it before, and I never expect to again. But the character of lake commerce is rapidly changing, and wild tonnage must soon be the exception.

The Frank E. Kirby will run her daily trips into the middle of next month or later, if the trade warrants it. The Wyandotte is still making daily trips and will continue as long as trade demands it. The fruit season from the Lake Erie Islands and Sandusky is now at its heaviest, and some very fine peaches are carried.

Capt. Arthur J. Fox took his old stand on the bridge of the Kirby on Monday last, and his trip was in the nature of an ovation. At Sandusky, Kelley's Island, Catawba Island, Put-in-Bay, and Middle Bass, he was seized on by men and women alike, and congratulated on his recovery. The captain still looks very pale and his voice is weak; but good care should bring him around to himself in a short time.

The Oceanica is in dry-dock here and her survey has just been completed and she is adjuged a total loss and abandoned to the foreign underwriters. What will be done with her is not known at this writing. McC.

PORT HURON.

THE OLD STEAMBARGE S. C. CLARK TO BE BROUGHT TO THF SURFACE AND TRANSFORMED INTO A WRECKER.

Special Correspondence to The Marine Record.

PORT HURON, September 22.

Capt. A. Hemenger has been at work with his wrecking outfit about two weeks, raising the wreck of the old steamer S. C. Clark, which has been sunk in Black River for several years. When raised, he will rebuild her, and work her into a first-class wrecker. It will be remembered that the Clark burned off Lexington, Mich., several years ago. The fire was extinguished and she was towed here by the Desmond, and she has lain here since.

The tug Vigilant, Capt. Ed. Allum, has landed a large raft of long timber in Sarnia Bay for Howard & Co.

The barge Boscobel, while towing up Black River, struck a stone sticking out of the railroad bridge, about two or three feet under water, and sank in about half an hour. She was laden with pulpwood for the fibre works. She was pumped out by the steamer D. F. Rose, and is again in commission.

Capt. Fred. J. Dunford has put steam in his yacht Joy, doing away with the naphtha engine. She will make about eight miles an hour.

The steam barge Alaska is in the Dunford & Alverson lower dock receiving new steel arches. When she comes out of the dock she will be in first-class shape.

There are several boats tied up here on account of low freights. There will be many more if things don't improve soon.

The Thompson's Tug Line people are at work on the burned tug Crusader. They are taking out her engine and getting her ready for a rebuild.

There is a large fleet of steamers and vessels at the Port Huron and Sarnia elevators all the time with grain.

A lease of the city dock at the foot of Butler street, Port Huron, has been granted to John M. Gleason as agent of a new ferry company. It is reported that the boats for the ferry left Chicago more than a week ago and stopped at Alpena pending the action of the council.

The steambarge A. Sumner will be sold soon by the United States Marshal. She is a small barge with no rating. She was formerly the lake tug A. Sumner. Capt. Lew Cary bought her and put a boiler and engine in her, but the 53-cent dollars struck him and he is in the U. S. soup, where lots of others have gone, and where lots will go if there is not a change for the better.

K.

CHICAGO.

THE MANITOU CLOSES HER SEASON—A NUMBER OF LUMBER HOOKERS FORCED TO GO INTO ORDINARY.

OFFICE OF THE MARINE RECORD,
CHICAGO, Sept. 23.

The Lake Michigan and Lake Superior Transit Co.'s fine steel passenger steamer Manitou arrived from Mackinaw Island last Thursday morning on her last

trip for this season. She has done an excellent business during the season, making tri-weekly trips between Chicago and Mackinaw. She has gone to South Chicago to be placed in winter quarters.

Business in the lumber carrying trade gets worse and worse. Cargoes are very scarce, and the freights so low that they are not worth going for. The following schooners have been stripped: Cheney Ames, Ada Medora, Stafford, Thomas Howland, Ottawa, America, and City of Sheboygan. The schooner James G. Blaine and A. Mosher will go out of commission on their arrival. Many schooners have been in port several weeks waiting for cargoes, and will lay up soon unless business improves.

The yachts Siren and Vencedor have been racing during the past week. The two yachts went out last Saturday for a brush over the Columbia Yacht Club's outer triangular course. There was a northerly gale blowing that sent some much larger vessels into shelter. Both yachts carried double reefs in their mainsails and staysails, but the Siren's reef bands were the wider. Shortly after both yachts had got down to business, however, a turnbuckle on one of the shrouds gave way on the Siren, and she came back in. The second race of the series was sailed Monday, but proved a drifting match, neither boat coming in within the time limit.

The steamer Griffin, Capt. Orville Green, laden with grain, when coming down the south branch of Chicago River on Sunday in tow of the tug Morford, brought up on Washington street tunnel, and was detained several hours. The water in the river was at a very low ebb. Traffic over Washington street bridge was entirely suspended, as the bow of the big steamer was on the draw of the bridge and prevented its being closed.

James A. Calbick & Co. chartered the Toltec and Miztec for corn to Kingston at 2½c. Carr & Blair chartered the Whitney and Wayne for corn to Ogdensburg at 2½c free of tolls; the steamer Lindsay for corn to Midland at $1\frac{3}{16}$c free of elevation; the steamer Progress, for oats to Sarnia at 1⅛c, free of elevation.

Capt. John Prindiville, chartered the schooner P. B. Locke for wheat to Toledo at 1¼c; the steamer Tuttle for 98,000 bushels of chipped oats to Black Rock at 1¼c free of elevation; the schooner Dundee for corn to Fairport at 1c.

WILLIAMS.

IN GENERAL.

The corner-stone of the Lachine Hydraulic and Lock Co's. main dam and power house was laid on the 12 inst. The dam, which extends into the Lachine Rapids, 4,000 feet long, and the main dam is 1,000 feet in length. It is expected that 80,000 horse power will be generated. The company expect to be able to supply light and power to Montreal by November 15.

The report comes from Painesville that the body of Capt. George McKay, of Bay City, who was drowned when the Little Wissahickon was lost July 9, has washed ashore near that town, and has been positively identified.

The contracts for building the new battleships were awarded as predicted in THE RECORD last week. One goes to the Wm. Cramp & Sons Ship and engine Building Co, Philadelphia, at $2,650,000; one to the Newport News Shipbuilding and Drydock Co., at $2,595,000; and one to the Union Iron Works, San Francisco, at $2,674,950.

Wheat in store at the head of the lakes is apportioned among the various terminals elevator lines as follows: Belt Line, 566,341 bushels; Consolidated, 2,527,617; Globe, 2,014,832; Great Northern, 108,040; Superior Terminal, 376,783: Consolidated B, 282,484; Consolidated H, 29,439; total, 5,905,536. There is 11,716,295 bushels in store at Minneapolis.

There is talk by engineers who have had work to do in Sand Beach harbor of the probabitility of closing of the north entrance of that harbor, the reason being that the current which sets in and out of it is responsible for the shoaling of the harbor after many thousands of dollars have been spent id deeping it.

Capt. F. A. Fick, of the Fedora, reports striking a shoal when coming down St. Mary's River, a short distance WSW. of the intersection of Sailors' Encampment light and Point of Woods light. He was lying at anchor east of the course waiting for a tow to pass, and when he signaled to go ahead the Fedora did not move, being hard on forward. The chart shows 30 feet of water in the channel and vicinity.

PORTLAND, ME., Feb. 11, 1896.

H. G. Trout, Buffalo: I beg to inform you that the propeller I ordered from you last summer for our steamer Madeleine has been in use two months, and it has proven very satisfactory, having increased her speed fully 10 per cent, using same amount of steam, and same number of revolutions as with old wheel.

EDMUND R. NORTON, Mgr.

WRECKS AND WRECKING.

The storm popularly known as the "equinoctical gale," has been sweeping over the Great Lakes, but owing to the ample warning given, shipping did not suffer to any great extent. The schooner Yukon went ashore Saturday afternoon, east of the entrance to the Cuyahoga River, Cleveland, striking about the same place that the steamer Tasmania did two years ago. The continued heavy sea prevented the sufficient lightening of her ore cargo, and to prevent her pounding too much she was scuttled Sunday. Capt. Ed. Morton, commodore of the Wilson fleet, has been looking after her, and Capt. Cyrus Sinclair, of Chicago, is representing the underwriters' interests.

The three-masted schooner H. H. Badger went ashore near Middle Island, Thunder Bay, Monday evening, with a load of cedar. The crew were taken off Tuesday morning, by the Middle Island life-savers. The Badger went broadside on, and was scuttled.

Last Saturday night the Canadian steamer Ocean, with merchandise, Toronto to Montreal, ran ashore on Presque Isle, near Kingston. She was released Monday night by the Donnelly Salvage and Wrecking Co., but her hull was somewhat damaged.

Somebody, either through carelessness or vandalism, opened the sea-cooks of the passenger steamship North Land, Monday night, allowing her to fill with water to the depth of 20 feet, when she sank in the slip. She was soon raised, but the water did much damage to machinery and the fittings of her main and cabin decks.

Among the lighter damages inflicted by the gale were those sustained by the steamer Alaska, which burst a steam-pipe during the gale, on Lake Superior. She had a rough siege of it in the heavy sea, but finally managed to reach Marquette with a cargo badly damaged from mixing.

One total loss was caused about 10 o'clock Monday night, by a collision off Bar Point, Detroit River, between the steamer Fedora and the schooner David Macy. The Fedora struck the schooner on the starboard bow, cutting her to the water's edge. The master of the Macy says the mate, who was at the wheel, misunderstood his orders, and threw the wheel hard astarboard, instead of hard aport, thus rendering the collision unavoidable. The Fedora's bows were damaged, and her foretopmast was carried away. As it fell it grazed Capt. Fick's shoulder, but he fortunately escaped without serious injury. The schooner's crew were taken aboard the Fedora. The Macy was built in 1878, and is owned by Homer Harbeck, of Spring Lake, Mich. She is valued at $1,500, and rates B1½. She was bound up light.

The schooner Pilot struck a sunken wreck while trying to make the harbor at Caseville, Mich., and stove a hole in her bottom. She is a total loss, but her crew escaped.

The sail-boat Lottie May was caught in a squall two miles off Milwaukee a few days ago, and capsized. Four young men aboard her clung to the keel, and were rescued by the Milwaukee life-saving crew.

The uew Canadian stemer Rosemount was damaged $650 worth by striking a Welland canal gate. Some of her wheat cargo from Ft. William was also damaged.

The American Wrecking & Salvage Co., has abandoned for the present its efforts to recover the copper from the wreck of the Pewabic in Thunder Bay, Lake Huron. The steamer H. A. Root, with the equipment, has returned to Milwaukee. The company are very reticent as to the degree of success met with by the diving machine, which was gotton up by Mr. Worden G. Smith, of Milwaukee. Report has it that the chamber was let down to a great depth, and that the pressure of the water bent some of the braces. The chamber is said to be built of quarter-inch and half-inch material, which is rather light for such a purpose.

The success which Mr. Carl D. Myers' diving machine has met with has caused some quarreling among those interested in it; they begin to appreciate the vast possibilities within their reach, each wants apparently as big a slice as he can get. Attachments have been filed by several of the stockholders, among whom are Messrs. Sigmund Mulhauser, John E. Wood, Fred. S. Dale, Dr. N. Stone Scott and Joseph and Henry Wood, all of Cleveland. While Mr. Myers was in Cleveland, one of the workmen, Joseph McDonald, descended 210 feet in the machine, which worked very successfully.

The surveyors have decided that the wreck of the Oceanica is worth only $35,000, and this valuation, with the wrecking bills, makes her a constructive total loss, as her valuation in the insurance policies is $65,000.

James Gustin, a spiritualist, claims to have located the wreck of the Chicora, and agrees to locate her for $10,000, which he will divide with the families of some of the dead crew.

THE FREIGHT SITUATION.

There is nothing that can be considered as encouraging in the outlook. An advance from 20c to 25c in the soft coal rate to Milwaukee means nothing, so far as making money for the vessels goes. Ore shipments seem to be constantly growing lighter, and grain cargoes are scarce at 1½c on wheat from Duluth and 1⅛c on corn from Chicago to Buffalo. The smaller vessels are constantly forced to lay up in great numbers, and practically the whole of the Bradley fleet, large and small, is in ordinary.

Ore dealers do not expect to sell any more, except possibly a few thousand tons of non-Bessemer. The Pittsburg & Lake Angeline Co. announced that it would close the property next Saturday for an indefinite period, whereupon the employes have offered to work for ninety days, accepting in payment the company's paper. It is not known whether the proposition will be accepted. The Oregon and Pennsylvania have cut wages 10 per cent and operations have been suspended at the Norway and Cyclops. There will be a large amount of ore unsold over on the Lake Erie docks to be disposed of this winter, and indications, even for 1897, are not so bright as might be desired.

ERIE CANAL IMPROVEMENT.

The New York State Canal Board met last Friday, and in connection with other business approved plans and specifications calling for $252,154 worth of work under the $9,000,000 improvement scheme. The work is divided as follows: Western division, Erie, $126,600 for deepening the canal from record of Platt's Aqueduct to Schenectady; middle division, $115,266, to include an item for lengthening and improving Lock No. 8 on the Oswego canal, the last lock before entering Lake Ontario; eastern division, $10,278. This work will soon be contracted for.

VISIBLE SUPPLY OF GRAIN.

As compiled for THE MARINE RECORD by George F. Stone, Secretary Chicago Board of Trade, September 19, 1896:

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY. Bushels.
Albany	.....	40,000	75,000	.....	.....
Baltimore	1,233,000	1,420 000	350,000	74.000	.....
Boston	1,152,000	423 000	233.000	.....	.....
Buffalo	2,237,000	752,000	473,000	154,000	219,000
" afloat	.....	.....	.....	.....	.....
Chicago	13.219,000	4,280.000	1,861.000	378,000	97,000
" afloat	.....	.....	.....	.....	.....
Cincinnati	7,000	2 000	11.000	3 000	25,000
Detroit	485.000	11,000	15,000	34,000	.....
" afloat	.....	.....	.....	.....	.....
Duluth and Superior	5,905.000	19,000	162,000	272,000	280,000
" " afloat	.....	.....	.....	.....	.....
Indianapolis	339.000	53.000	.....	.....	.....
Kansas City	573,000	25,000	69,000	5,000	.....
Milwaukee	430,000	3,000	.....	131.000	61,000
" afloat	.....	.....	.....	.....	.....
Minneapolis	11,716 000	11 000	157.000	6 000	14,000
Montreal	355.000	44.000	163,000	6,000	25,000
New York	3,322 000	2,761 000	1.949,000	197,000	86,000
" afloat	71.000	9.000	71 000	26,000	.....
Oswego	24,000	20,000	.....	.....	10,000
Peoria	184.000	46,000	355.000	8.000	22,000
Philadelphia	540 000	726.000	131.000	.....	.....
St. Louis	3,355,000	603,000	285,000	19.000	.....
" afloat	.....	83.000	.....	.....	.....
Toledo	711,000	30,000	377,000	86,000	.....
" afloat	.....	.....	.....	.....	.....
Toronto	125.000	.....	65.000	.....	25,000
On Canal	496,000	75,000	676.000	478,000	269.000
On Lakes	3.176 000	2,085,000	974.000	87,000	201,000
On Mississippi	.....	100,000	8.000	.....	.....
Grand Total	49,655.000	13,621,000	8.460,000	1,964.000	1,338,000
Corresponding date 1895	39,385,000	5,411 000	3,045 000	615,000	1,007,000

A long-felt want of Upper Georgian Bay navigators has been met in the issuing by the Hydrographic Office, of a chart, in large detail, of this bay from French River to Little Current and Cabot Head. This includes the greater portion of the shores of Grand Manitoulin and the neighboring islands, and the new ranges, and the results of all late soundings are carefully given. A scale of statute miles, extending the entire length of the chart from top to bottom, greatly facilitates calculations for those accustomed to compute distances by this standard of measurement. The price is $1.25. Furnished promptly upon application at THE MARINE RECORD offices, Fourth Floor, Western Reserve Bldg., Cleveland.

CANADA'S STEAMBOAT INSPECTION SERVICE.

We are indebted to Hon. Wm. Smith, Deputy Minister of Marine and Fisheries, Ottawa, Ont., for a copy of the supplement to the 38th annual report of the department, being chiefly the reports of the chairman of the Board of Steamboat Inspection, together with reports on the current survey of the Gulf of St. Lawrence, report from the pilotage authorities, and from the Harbor Commissioners of the chief ports. Mr. W. B. Dawson, in charge of the tidal survey, submits a very interesting report, accompanied with a series of charts, relating to the currents. The reports of inspectors are followed by an exhaustive report on harbor work at Montreal, which includes the following statistics for the calendar year 1895:

Six hundred and forty seagoing vessels arrived in port during the season, with an aggregate tonnage of 1,069,386; of these 590 were built of iron, with a total tonnage of 1,052,225. The decrease in seagoing tonnage from the previous year was 27,523. Of inland vessels there arrived in port 4,498, with a total tonnage of 943,717; showing a decrease of 168 vessels and 36,092 tons. Exports were: Lumber, 168,672,028 feet across the Atlantic and 8,474,000 feet to South America; wheat, 3,650,721 bushels; corn, 2,605,848; peas, 741,865; oats, 10,750; barley, 808; rye, 16,213; all grains, total, 7,026,205; flour, 1,061,042 barrels; meal, 36,161 barrels; eggs, 94,897 cases; cheese, 1,728,403 boxes; butter, 71,375 packages; apples, 155,005 barrels; cattle, 96,564; sheep, 215,508; horses, 12,468; hay, 12,070 tons. Imports—Coal, 54,701 tons from Great Britain and 621,739 tons from the maritime provinces; cement, 146,971 barrels; scrap iron, 9,692 tons.

The harbor master's report for the port of Toronto states that the bay was clear of ice April 7, 1895, and was frozen over Dec. 9, making the season shorter by 38 days than in 1894. The first arrival was the stone hooker Lillian, April 15, the master, R. Smith, receiving the customary hat. The number of arrivals at Toronto was 2,494, as follows: steamers loaded, 1,253; light, 102; propellers loaded, 132; light, 98; schooners loaded, 883, light, 26; The amount of coal received by vessel was 162,478 tons, an increase of 24,971 tons over 1894. The harbor master comments on the extraordinary fall of water, which caused a great deal of trouble.

Following is a tabulated statement of the number and tonnage of vessels on the registry books of the Province of Ontario, Dec. 31, 1895, and of new vessels built during the year:

	TOTAL ENROLLMENT.				NEW VESSELS.			
Name of Port	No. Vessels.	No. Steamers.	Gross Tonnage Steamers.	Total Registered Tonnage.	No. Vessels.	No. Steamers.	Gross Tonnage Steamers	Total Registered Tonnage.
Amherstb'g.	2	.....	.....	121	....	....	.....	.....
Belleville....	16	10	520	828	....	....	.....	.....
Bowmanville	4	.....	.....	752	....	....	.....	.....
Brockville ..	26	24	368	416	....	....	.....	.....
Chatham....	29	18	1.184	1,719	....	....	.....	.....
Chippewa...	3	2	263	153	....	....	.....	.....
Coborg.....	4	1	23	311	....	....	.....	.....
Collingwood	66	64	8,623	6,249	6	6	2,123	1.444
Cornwall....	3	2	178	214	....	....	.....	.....
Cramahe....	2	.....	.....	278	....	....	.....	.....
Deseronto...	18	13	1,383	1,387	....	....	.....	.....
Dunnville...	2	2	205	122	....	....	.....	.....
Goderich....	44	25	695	1.877	....	....	.....	.....
Hamilton ...	51	38	7,550	6,662	....	....	.....	.....
Kingston....	198	79	10 357	25,801	10	9	1,653	946
Morrisburg..	3	1	72	384	....	....	.....	.....
Napanee	3	.....	.....	409	....	....	.....	.....
Oakville.....	4	.....	.....	323	....	....	.....	.....
Ottawa.....	307	167	13,719	25,506	26	16	636	680
Owen Sound	34	31	5,250	3,891	1	1	782	492
Picton.....	32	11	1.375	3,330	....	....	.....	.....
Port Arthur.	8	8	3,078	1,991	....	....	.....	.....
Pt. Burwell .	12	5	41	986	1	1	14	7
Pt. Colborne	6	2	95	681	....	....	.....	.....
Pt. Dover...	18	6	170	996	....	....	.....	.....
Pt. Hope....	62	36	3,024	5,989	....	....	.....	.....
Pt. Rowan..	4	1	168	351	....	....	.....	.....
Pt. Stanley..	12	10	1,311	1,097	....	....	.....	.....
Prescott	28	14	787	3,811	....	....	.....	.....
Sarnia.....	28	21	8,393	6,763	1	1	29	20
Saugeen	9	9	388	266	....	....	.....	.....
Sault Ste. Marie	15	12	477	851	....	....	.....	.....
St.Catherine	128	63	8,809	19,290	4	2	32	91
Toronto.....	240	166	16,995	17.017	3	3	76	52
Wallaceburg	31	17	1,058	2,024	....	....	.....	.....
Whitby.....	3	.....	.....	514	....	....	.....	.....
Windsor	53	27	6,140	5,309	....	....	.....	.....
Total....	1,508	885	102,699	148,669	52	39	5,345	3,732

A LARGE NEW LUMBER FIRM.

One of the new additions to the list of lumber firms in North Tonawanda is the Wisconsin Lumber Co., successors to the Gratwick, Smith & Fryer Lumber Co. The company is made up of Western lumber firms who are united in the one company and include Frank Boutin Sr., Frank Boutin, Jr., the Best Brothers, and the Ashland Lumber Co. They manufacture their own lumber from the Chequamegon Bay district in Wisconsin. A few weeks ago, C. M. E. McClintock of the Ashland Lumber Co. leased the Gratwick docks, which have a frontage, with the slip, of about 1,800 feet, and last Friday their first tow of lumber was unloaded Before the season closes, the company expects to receive 12,000,000 feet, and will continue to handle lumber during the coming season as long as it is profitable. They have a force of 50 men at work now, which is all that will be put on for a few weeks at least. C. M. E. McClintock is the manager of the yards and Peter D. Hershey, formerly with Gratwick, Smith & Fryer, is the superintendent.

MARINE RECORD Life Savers' Series.

CAPT. FRANK J. OCHA.

The subject of this sketch has for several years past been keeper of the Ottawa Point life saving station. Capt. Ocha was born in 1859, in Huron County, Mich., and was reared on the shores of Lake Huron. He was early thrown among the fishermen and grew in the element which has made him so useful as a member of the life-saving service. He began his life-saving career at the age of 14, when he saved a playmate from drowning while bathing, by swimming to him, reaching him

CAPT. FRANK J. OCHA.

only after he had gone down the second time, and bringing him safely to shore.

Capt. Ocha enlisted as a surfman in the Ottawa Point life-saving crew at the age of eighteen years, and during the fall of 1877 and the entire season following, held the position of No. 1, or stroke oar of the crew. He afterward fished and sailed two seasons, and again served in the Ottawa Point crew in 1881 and 1882. He then took up the fishing business again, and continued at fishing and sailing until the spring of 1888, when he again enlisted as a surfman, this time with the crew at Sand Beach. He was appointed keeper of the Ottawa Point station the following autumn. Capt. Ocha combines with the good judgment and fearlessness necessary for his post, the qualifications of a good business man and disciplinarian, and in consequence stands high with the department.

The September issue of the Canadian Engineer is of special interest to all users of steam power. It contains a full report of the Seventh Annual Convention of the Canadian Association of Stationary Engineers profusely illustrated by pen-and-ink sketches made on the spot by the Engineer artist, and also a number of special articles bearing on the economical development of power.

FLOTSAM AND JETSAM.

Capt. Archie McArthur is now master of the barge Alex Holley.

Excavation for the new South Bass Island light-house has begun.

Capt. David Beggs has succeeded Capt. Ole Hanson in the steambarge Philetus Sawyer.

Marquette ore shipments for last week and the previous week aggregate 97,821 tons.

The steamer Edith May will be sold at auction under mortgage at Clayton, N. Y., October 3.

The United States Court has ordered the yacht Minx to be sold at Toledo, to satisfy a claim of the Craig Ship-Building Co.

Capt. Ingar Olsen, keeper of the new Plum Island life-saving station, was married the other day to Miss Emely Tews, of Milwaukee.

The North West and North Land report a big increase in the passenger trade. The Land carried 1,000 more passengers than she did last season.

A falling ore pile demolished two of the six Brown hoists at Lorain, Saturday, the damage to the C. L. & W. Railroad Co.'s property being $6,000.

The side wheel steamer City of Buffalo has a record of 9 hours and 37 minutes from Cleveland to Buffalo in heavy weather, and using only four of her six boilers.

A shoal has been discovered in the Straits of Mackinac about a mile and a half southeast by south of the the Gray's Reef lightship. Capt. M. Riley reports that the Susquehanna touched it though the charts show thirty feet of water.

About 40,000 feet of oak has been received at Rieboldt, Wolter & Co.'s shipyard, Sturgeon Bay, from Marysville O., for the outside planking of the new Milwaukee fireboat. Some of the planks are 37 feet long, 3 feet wide, and 4 inches thick.

Lieut. J. F. Parker, U. S. N., has been appointed to take charge of the Branch Hydrographic Office in New York City. Lieut. Ridgely Hunt, U. S. N., has been in charge since the transfer of Lieut.-Com. Arnold, U. S. N., to the Massachusetts.

The Sir William Fairbairn's first cargo was 4,008 tons of ore in addition to 135 tons of fuel, on 14½ feet. Her contract required her to carry 4,000 tons of ore and 100 tons of fuel, so that her capacity above the requirements is about 40 gross tons.

Owners of the Christopher Columbus report a very successful season between Milwaukee and Chicago. She reached Duluth last Wednesday evening to go into ordinary, but gave an excursion Sunday to Bayfield and the Apostle Islands.

Buffalo receipts for the week ended Saturday, September 19, were as follows: Wheat, 2,507,700 bushels; corn, 1,055,000; oats, 1,469,750; other grains, 772,269; flour, 245,125 barrels; iron ore, 14,565 tons; lumber, 10,118,466 feet; shingles, 6,135,000. Shipments—coal, 76,236 tons; cement, 16,746 barrels; salt, 44,411 barrels; sugar, 31,667 barrels.

The following contracts in the ninth and eleventh lighthouse districts for the current fiscal year were awarded at Washington, last Thursday: Lot 1, lumber, Brownlee & Co., Detroit, $946; lot 2, hardware, Baker Hardware Co., Detroit, $218; lot 3, paints, oils, etc., Peninsular Lead & Color Co., Detroit, $149; lot 4, provisions, Allen Bros., Detroit, $801.

TRADE AND INDUSTRIAL NOTES.

The Cleveland City Forge Co. are forging a shaft for the City of Worcester which when ready will be put in place by the W. & A. Fletcher Co., of Hoboken, N. J.

Bids are wanted by D. E. Wright, director of public works, Cleveland, for furnishing and delivering on dock fronting on the Cuyahoga River about 147 feet of 48-inch riveted steel water pipe; also for furnishing 245 feet of 30-inch riveted steel water pipe to be delivered on Denison avenue extension at the Cuyahoga River.

The Marine Iron Works, Chicago, have just made a contract for shipment to a foreign government, for a small, powerful and very light draft river steamer. They will build the machinery, fittings and equipment complete, but the hull will be shipped in "knock-down shape," the company sending men to destination to set up and erect the work and start it in operation. The Marine Iron Works have just completed machinery for one of the harbor boats belonging to the U. S. Engineering Department.

SOME POINTS OF INTEREST IN THE CONSTRUCTION OF MODERN LAKE STEAMERS.

BY W. E. REDWAY, NAVAL ARCHITECT, BUFFALO.

The great development which has taken place in the carrying trade of the lakes since the early eighties, and the construction since that period of practically the whole of the existing fleet of steamers and barges, can be readily appreciated at the port of Buffalo, the great eastern terminus of the lake traffic, where each new addition to its number can usually be inspected soon after she gets into line.

The latest steamers have now attained such proportions, and represent such a large investment of capital, that it becomes a question of paramount importance to all who are interested in this trade, in view of the serious damage often occurring to many of them, and the great cost to underwriters attending their repair, that the general sufficiency of scantlings and arrangement of details should be as perfect in design and complete in execution as the naval architect's and ship builder's skill combined can make them.

A marked improvement has taken place with regard to longitudinal strength in the last few years, and doubtless the experience being gained by the construction of oil-tank boats in the various shipyards will have the effect of still further improving the quality of the general workmanship upon future boats.

Among other matters which strikes one as worthy of consideration, attention might be directed to the channel bars now so generally adopted for shipbuilding. When used in those portions of a ship where much bevel is required, such as forward and aft in the framing especially, it can be seen on close examination that the act of beveling the flanges for frames and reverse bars, instead of throwing the flange itself in and out from the heel, as it should be, buckles the web of the channel sufficiently to give the bevel required one way for the out bevel, and another for the in; thus making the section of the web a line of double curvature instead of leaving it straight, to that extent militating against its strength, and producing an unscientific result. The obvious cure for this defect is to either increase the thickness of the web or decrease the thickness of the flange and reduce the metal through the heel. If the change should necessitate the rolling of special pattern channels for shipbuilding purposes it becomes a question for the rolling mills or for the conbination which controls its production.

The adoption of lapped butts for plating is a good arrangement, but like other good things it is possible to have too much of it. When used in the sheerstrake and spar deck stringer plate, with quadruple riveting and reinforcement straps inside, the strength at the points is probably equivalent to 100 per cent of the strength of the plate if the riveting is perfectly sound; but it is impossible to make a neat, workmanlike job. The large heavy liners necessary with this system make the top edge of the sheerstrake look like the waves of the sea, in plan, and the gunwale bar has a similar appearance vertically. Flush butts upon this portion of the ship make an infinitely better looking finish. Any additional longitudinal strength can best be obtained by making the sheerstrake an outside strake, and flushing up the inside strake below with a doubling plate, closely fitted between the two landing edges of the adjacent strakes, and extending it as far forward and aft as necessary. In this connection also, the heavy fender plates, twelve inches wide and one inch thick, which are now becoming fashionable on the larger boats, would make a much better arrangement if wrought upon flush-butted plating. As now used the laps of the shell plating throw the fender very much out of line at every point, and the liners necessitate three-ply riveting in a portion of the vessel subject to heavy local strains, which it is extremely difficult to keep watertight. The riveting of these plates also might be increased considerably with advantage, in diameter of rivet and reduction of pitch. The fenders are likely to prove a source of trouble as now fitted.

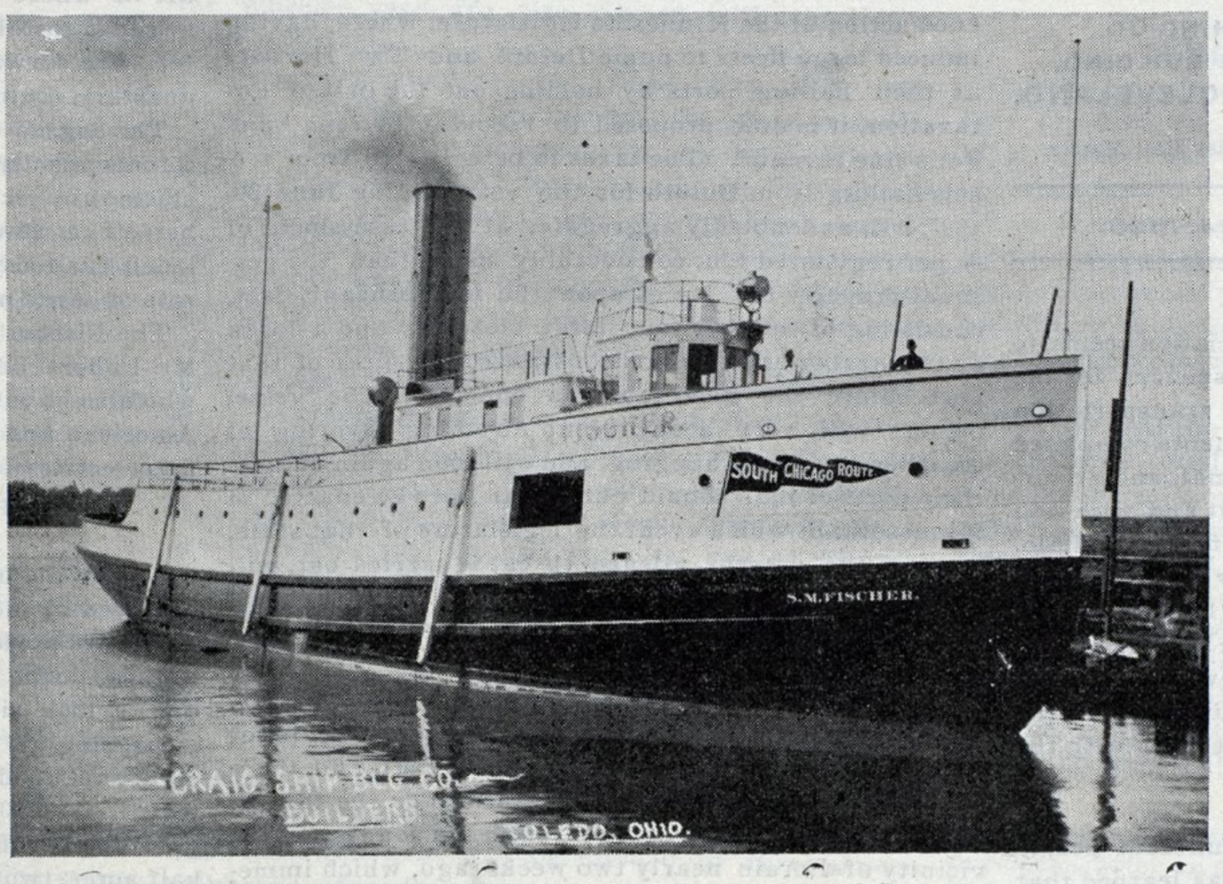
There appears to be an idea among some shipbuilders that it is economical to work the deck, shell, and tank-top plating as wide as possible, presumably so as to reduce the number of strakes contained in the vessel. It is very questionable if this is so; the extra cost of handling, the difficulty of removing buckles, and the actual loss of strength due to excessively wide butts more than counterbalance any supposed advantage due to the saving of the rivets in a strake or two of plating. This contention is emphasized and confirmed when one observes that the punching machine, operating on these wide plates, will not always reach the center holes in them, the latter having to be drilled by hand when in place on the ship, thus adding materially to the cost, and creating a possibility of some of them being omitted altogether.

The practice of making the flat keel plate an inside strake does not appear to be a commendable one; its difficulty of removal in case of damage to the bottom is too obvious to need dicussion. The adoption of the keel doubling plate, extending from garboard to garboard inside, and the consequent dispensing with all keel butt straps and frame liners, makes a much more solid and rigid combination where it is most needed. There is, no doubt, some saving in weight in the former plan, as a shipbuilder stated to the author recently; when it was pointed out to him that he lost the keel double, by making the keel an inside strake, he replied smiling knowingly. "We do not lose it; we save it." This is all right, apparently, from the shipbuilder's point of view, but its application is of questionable utility.

The stopping short of the gunwale bar upon the weather deck at each end where the round-in of the bow and stern commences, and the continuation of the connection between the stringer plate and sheer strake by means of flanging the outer edge of the stringer plates cold, and single-riveting the latter to the sheerstrake, is a poor substitute for carrying the bar all around. It is impossible to flange the outer edge of a curved plate cold without either puckering the flange or back setting the plate, because the material will not stave up cold, although it will stretch readily enough, and if the work is done hot, it is more costly than the bar would be. In taking out the back-set in the rolls after flanging, the flange becomes puckered, and when riveted up in place, the puckers are forced out of the flange, and transferred back to the plate, making it extremely difficult to ensure a neat finish, which is, in any event, not so strong as a bar with a good sharp heel. Flanged plates, like lapped butts, are capital things in their way, but they are not desirable for universal application.

The framing of topgallant forecastles is a matter also which deserves consideration. It is not an uncommon device to cut all the main frames off at spar deck height, and frame up the forecastle by means of short, straight angle bars, connected to the hull proper at top edge of sheerstrake by one or at most two rivets in the lower end of each only, thus forming a combination something like what is known amongst housebuilders as a "balloon frame." It is on record that a steamer on the upper lakes, after being in a collision, arrived in port with the other vessel's forecastle on board and almost intact. There could be no repetition of such an accident, if the main frames, or even alternate ones were carried to the top height, and but little additional cost would be entailed thereby.

The foregoing remarks are not written with any idea of dogmatically criticising adversely the products of lake shipyards, but rather with a desire to help forward a continual improvement in the already phenomenal progress in marine construction by the shipbuilders on the lakes. Neither is it pretended that the points mentioned are put forward as by any means exhausting the subject. "There are others."



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COMPLIMENTS FOR THE SCANDINAVIANS.

Why do prudent British underwriters think so highly of Scandinavian seamen? Because they know that it is the habit of those sober well-disciplined men to be at their posts at the time of sailing, enabling a captain to successfully encounter what is frequently the most perilous part of the navigation, and get away safely from the coast, and because in all situations they are thoroughly reliable seamen. Whatever Mr. Sidney Thomas may think, the "hardy Norseman" stands high up in the good graces of underwriters, and the recommendation to boycott him will be rejected with scoffing by the most experienced and prudent underwriter in London—whoever he may be. It is all very well to talk about patriotism, but marine insurance, here as else where, is conducted on strictly business principles; what pays best is the most sought after, and what competition comes in the most there the rates tend to fall to a minimum. Underwriters who have had again and again to pay heavy claims for accidents on the coast traceable to the helpless condition in which British sailors sometimes go — or, rather, are put—on board at leaving, are not likely to listen with impatience to a suggestion that they should on patriotic grounds discriminate in premium against sober Norwegians and in favour of our own less temperate seamen. It should be added that the Room is not partial to all foreign seamen. The Italians, for instance, are regarded unfavorably, because at the critical moment in a storm. when strenuous exertions tend so materially to overcome dander, they have a habit of falling on their knees and praying for help to the Virgin, who don't seem to be at home to storms—to support which phase of piety underwriters have to place large sums in the collection-plate when the inevitable claim goes round.—Fairplay.

NEWLY ENROLLED TONNAGE.

Following is a list of lake vessels to which official numbers and signal letters have been assigned by the Commissioner of Navigation, for the two weeks ending Sept. 12, 1896:

Official No.	Rig.	Name.	TONNAGE. Gross.	Net.	Where Built	Home Port
127,154	St. s.	Cecelia Hill	44 79	32.13	Fish Creek	Milwaukee
116,736	St. s.	Sr W Fairbairn	4,219.74	3,181.95	Wyandotte	Duluth
116,737	St. s.	Superior	70.93	48.23	Bent'n Harb'r	Duluth
107,242	Schr.	Alfred Krupp	3,259.43	3,124.70	Chicago	Duluth
86,363	Schr.	G. H. Corliss	3,259.43	3,124.70	Chicago	Duluth
150,734	Slp.	Prospect	10 44	10.44	Fruitport	Grand Haven
53,286	Bge.	Outing	33.40	33 40	Alexa'd'r Bay	Cape Vincent
112,123	St. s.	Ramapo	3,045.03	2,434.91	Buffalo	Buffalo

The Harlan & Hollingsworth Co., of Wilmington, Del., is building a steel barge for carrying naphtha in bulk, which is to be about 100 feet long. The contract was given by the Manhattan Oil Co., of Lima, O., whose representatives propose to use her in New York harbor.

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CLEVELAND, O., SEPTEMBER 24, 1896.

HERE AND THERE.

The Head of the Lakes Millers' Association seems to have been organized at a time most auspicious for the accomplishment of its object, a cheap transportation route to New York. With the improvements completed which have just begun on the Erie canal, and an organization of canal men more permanent and with improved facilities for handling grain and flour at Buffalo, the shippers will be able to hold their own against the keenes to pposition of therailroads. The latter are leaving nothing undone to attract or force the flour and grain trade away from the canal, but the New York people have themselves begun to see where their interests lie, and all efforts to use the canal are meeting with the heartiest encouragement.

* * *

A long breath was drawn by the innocent people along the lake coast of Ohio when it was learned that the General Assembly had at last enacted a fisheries law, and the hope was indulged that the vexed question was settled at last. Now it transpires that the whole force of a great part of the law is amended by what is termed a "clerical error." The pound net fishermen had succeeded in getting a provision inserted providing that it should be unlawful to set gill nets in Lake Erie except where the water was 60 feet deep. The provision was almost prohibitive, as the area of water on Lake Erie, which is deeper than 60 feet is most decidedly limited. Therefore it seems more than extraordinary that Providence or some other kind gentleman should so hypnotize one of the clerks—nobody seems to know which one—that that worthy should omit one of the most important words in the bill, namely, the word "except;" so that according to the law as it stands, gill nets may be set anywhere where the water is less than 60 feet deep, a meaning directly opposite to that originally intended. The matter is to be brought before the Supreme Court of the State for an opinion, but it will require some very clear evidence before that body as to the intentions of the Legislature in enacting the provision before the Supreme Court will meddle with the text. The struggle for fishery legislation, which has been carried on for several years past, has been a steady contention between the keen wits of the pound net men and those of the gill net people, and the indications are that the latter are not so slow as they might have been thought.

* * *

And now it is the shipbuilding interest in Ohio that is handicapped by the great desire manifested by Ohio legislators to keep on the good side of the labor vote. Cleveland shipbuilding has been retarded very sadly this summer, during months when there was the greatest need for haste, by the loss of about 12 per cent of each week's working time on account of the Saturday half-holidays. Not only have they been delayed in a degree which is likely to cost something in the way of demurrage, but they are seriously handicapped in competing with other builders, who are not hampered by the same legislation, say in New York and in Michigan. Saturday half-holidays are, it is true, desired by many workmen; but the majority of the sober, industrious family men will be found in favor of working the full week, and taking their vacation in a lump, at times most convenient for them; while on the other hand, the employer loses one-eighth the productive power of his machinery, or else is compelled to increase the pay of the men 50 per cent during that part of the time, which amounts to a good deal of money on the cost of one ship. All these handicaps count very seriously in the matter of competition for new work, and tells even more when a "rush" repair job is given to the yard. If the law or the custom were uniform throughout the country, it would not be so burdensome; but people who have large sums invested in industrial plants have good cause to complain of this eternal meddling by the state legislatures.

* * *

Another case much to the same point is the threatened action of the Minnesota legislature, where, having induced large fleets to name Duluth and Two Harbors as their hailing ports by holding out the bait of low taxation, it is now proposed to "sock it to 'em," and get a fine revenue. The taxes to be collected from vessels hailing from Duluth for the year ending June 30, 1897, will undoubtedly aggregate, at the assessment of 3c per registered ton, considerably more than the personal property tax levied upon the insignificant fleet, consisting of three or four large steamers and a dozen or two harbor craft, which constituted the fleet of that port before the new law was enacted. The vessel owners will very soon resent anything savoring of treachery and sand bagging, and will soon again change their ports of hail should obnoxious laws be enacted in Minnesota; in which event the legislature of that state, in case the present alleged threat is carried out, will have accomplished nothing save to kill the goose that would have laid golden eggs for the state.

* * *

Reports of the contemplated establishment, by Mr. John D. Rockefeller, of an immense modern steel plant on the shores of Lake Erie are still current, and there appears to be a good deal of foundation for the stories. Mr. Rockefeller took a drive through the country in the vicinity of Lorain nearly two weeks ago, which immediately started the report that the Johnson Company had sold out to him. In response to a telephonic inquiry from THE RECORD, President Moxham stated that the story was not only false, but was without any reasonable foundation. It would not be at all surprising if Mr. Rockefeller should decide to locate his proposed steel plant at Lorain; but he was probably reconnoitering that country, just as he may have been looking over ground anywhere in Northern Ohio. The south shore of Lake Erie is the logical territory for the location of all large new iron plants of this section in the future. Mr. Carnegie recognized this, and so expressed himself; and while he immediately returned to Pittsburg and purchased land at Duquesne for the construction of blast furnaces and new mills, and therefore was charged with insincerity, there is every reason to believe that had the Carnegie Steel Co. not already had such extensive interests in and around Pittsburg, the new mills would have been placed in Northern Ohio.

ADVERTISE.

A man may bet,
And a man may sweat,
And a man may puff and blow;
But he can't get trade
By sitting in the shade,
Waiting for business to grow.—Ex.

Mr. Arthur Sewall, vice-presidential candidate, and president of the American Merchant Marine Association, has tendered his resignation of the latter office, because he disapproves of the action of the secretary, Mr. Alex Smith, of New York, "in introducing politics and partisanship in the workings of his office."

TUG S. M. FISCHER.

(SEE ILLUSTRATION ON PAGE 7.)

We are in receipt, from the Craig Ship Building Co., Toledo, of a handsome potograph of the tug S. M. Fischer, built by the company for the Lake Michigan Car Ferry Transportation Co., for the purpose of towing car-laden barges between South Chicago and Peshtigo, Wis., the terminal of the Wisconsin & Michigan Railroad. The Fischer was built to be the most powerful tow boat on the Great Lakes, and during the four months she has been in commission she has lived up to her record.

The Fischer is, in truth, a small steamboat, and a few years ago wouldn't have been considered so small, either. She is 148 feet long by 30 feet beam and 17 feet molded depth. Her depth to the hurricane deck is 24½ feet, and her water bottom 42 inches deep. She measures 628.71 tons gross, and 427.52 net. She was launched June 2.

The engine is triplex, 18, 33 and 50 by 36 inches. This was built by S. F. Hodge & Co., Detroit. The boilers, measuring 11½ by 11½ feet, were built by the Lake Erie Boiler Works, Buffalo, and are allowed 170 pounds pressure. The propeller wheel is 11½ feet in diameter by 16 feet pitch.

The Fischer has a main deck extending her entire length, and the spar or hurricane deck extends to within 40 feet of the stem. The tow posts are set just aft of where the hurricane terminates, and a wide sweep is thus left for the tow line. The crew's quarters are forward on the main deck, and the officers' quarters, dining room, etc., are on the hurricane deck.

The engine indicates about 900 horse-power, and has a fuel capacity of about 150 tons. She has proven most efficient in her especial line of work, and distinguished herself a few days since by towing three of the laden car-ferry barges down Lake Michigan at the rate of seven miles per hour, in a heavy gale.

The Fischer was constructed under the inspection of Mr. Robert Logan, who represented the owners, and who also gave her the highest class in the Record of American and Foreign Shipping. She is rigged with a fine electric plant, and a Williamson steam steerer.

CALCUTTA'S DOCKS.

Among the most notable systems of dock construction achieved by modern engineering science, Calcutta may be said to present a conspicuous example. The entrance to these docks is through a channel eighty feet wide, and a lock sixty feet wide, terminating in a basin measuring 600 by 680 feet. Two entrances, sixty and eighty feet wide, lead from this basin to the dock proper, which is 2,600 feet long, sixty feet wide for the greater part of its length, and covers thirty-four and a half acres, two dry-docks also leading off from the basin, one of them 520 feet long and the other 350 feet. While the river is low these waterways are supplied with fresh water from the neighborhood, and elaborate provision is made to remove the mud from this water before it is pumped into the basin. The docks are equipped with fifty-six movable hydraulic cranes, of which fifty are constructed to move as much as one and three-fourths tons, while the remainder can handle weights of five tons, all of them overhanging the quay twenty-nine feet, and operated by water under pressure, as are also the lock gates, capstans, and swing bridges about the docks. The water is under a pressure of 700 pounds and is furnished by two pairs of hydraulic engines, each of 230 horse-power.

FOUND A TEREDO-PROOF PAINT.

The commission appointed by the Secretary of the Navy to test a teredo-proof paint presented by Thomas J. Cholderson, the painter at the Peninsula navy yard, has concluded the test of it. On March 16 they sank at the navy yard four pieces of heart pine wood. One piece was unpainted, while the others had coats of the teredo-proof paint. The commission had the pieces of wood raised on the 15th of September. The piece that was not painted was totally honeycombed by the teredo and fell to pieces. The other three pieces were not touched by the insect and were perfectly dry on the interior. The commission considers the invention a perfect success, and so reported to Washington.

The Canadian government has passed an order in council that the canals be opened on Sundays.

SHIP BUILDING AND REPAIRS.

LITTLE NEW IN THE OUTLOOK.

Launches and trial trips constitute about all the news that emanates from the shipyards at present, and there is little likelihood that any building projects which have not yet matured will receive much further attention for several weeks to come.

The Cleveland Ship Building Co. will not rush work very hard to get the yard ready for the new ship they are to build for the Wilson Transit Co. They will undoubtedly try, however, to get her into the water before midwinter, or, at least, to have her so far advanced that she will not stand in the way of the acceptance of any new orders which may be placed when times improve.

All the work at present on hand at Capt. James Davidson's shipyard, West Bay City, is far advanced, and steamer No. 77 is rapidly nearing completion. Her equipment is being received at the yards, and includes a Chase towing machine, similar to that installed on board the Appomattox. Capt. Davidson is now on Lake Erie, and it is probable that he will begin work on one or two more ships before winter has fairly set in.

The strike which was inaugurated at the West Bay City yard of F. W. Wheeler & Co., West Bay City, on July 3, because the company refused to discharge a non-union man, was declared off on Thursday of last week, the struggle resulting in a complete victory for the company. The union representatives held a final session with the officers of the company on the day prior, and when the officials declined to compromise they declared the strike off, instructing the members that they might apply individually for reinstatement without losing their identity as members of the union. A large number of the men were re-employed by the company, but for some of the ringleaders no work could be found.

The Union Steamboat Co.'s new steamer Ramapo, built by the Union Dry-Dock Co., Buffalo, had a very successful trial trip a few days ago, and left for Chicago with about 3,050 tons of coal and about 100 tons of fuel on 14½ feet draft. This is a very good load for a boat measuring only 320 feet on keel by 40 feet beam. She is intended primarily as a package freighter and grain and flour boat.

Mr. John Craig, of Toledo, and Capt. James Davidson, of West Bay City, were in Cleveland this week in search of new work. It seems unlikely, from present appearances, that anything will be closed for some little time yet.

The slip for Reiboldt, Wolter & Co.'s new floating dock at Sturgeon Bay, which is 130x250 feet, has been dredged out to a depth of 21 feet.

The Scotch-type boilers for the new revenue steamer Gresham are rather unique in one way. The cylindrical shell of each of the four boilers consists of two plates only, which are butt-strapped in the usual manner, but in only two places, the opposite side of the shell. The plates measure 9 feet 7⅛ inches by 18 feet 1½ inches, and are $1\frac{1}{16}$ inches thick. The eight plates weighed 67,240 pounds, or 8,405 pounds each, and were said to be the heaviest plates ever brought to a lake shipyard. The plates were furnished by the Lukens Iron & Steel Co., Coatesville, Pa.

LAUNCHES OF THE WEEK.

JAMES WATT.—The Cleveland Ship Building Co. launched the steamer James Watt, which they are building to the order of the Bessemer Steamship Co., at 2:30 o'clock Wednesday afternoon, the 23rd inst. Under the terms of the various contracts, this ship was the first of the twelve new ships ordered which was to be delivered to the Bessemer company. Her delivery was set for October 1, and while she will be a few weeks behind time the company have shown remarkable promptness when it is considered that holidays have been so numerous this summer, to say nothing of the Saturday half-holidays and the unusual number of rainy days. While the yard work began shortly after the launch of the Queen City, on May 9, the number of days' work on the ship was about 75, the average number of men employed being about 400.

The James Watt, or No. 26 at the Cleveland shipyard, is 425 feet long over all and 406 feet between perpendiculars, by 48 feet molded beam, and 28 feet molded depth. She is built on the channel bar system of construction, and will receive the highest class in the United States Standard Register of Shipping, good for twenty-five years. The water bottom is 66 inches deep, along the line of the center keelson. The tank top is plated with heavy steel, and is not covered with wood. The main deck beams are laid 8 feet centers, but there is no laid main deck in the hold.

The main engine is of the vertical inverted, triple-expansion type, with cylinders 25, 40, and 68 inches diameter by 42 inches common stroke. She has three Scotch-type boilers, 13x13 feet, tested to 175 pounds working pressure.

The plating of the ship is extremely heavy, and her fender strakes are one-inch steel straps a foot wide, such as are fitted on all the Rockefeller boats except those built at F. W. Wheeler & Co.'s yard. There is considerable controversy as to their utility in protecting the hull, but it is indisputable that they add much to the appearance of the ship. She is the handsomest vessel ever turned out from this yard. She is fitted with the usual auxiliary machinery. Her steam capstan windlass forward, reversible capstan aft, and two deck capstans were furnished by the American Ship Windlass Co. She carries a Williamson steam steerer. Mr. Robert Logan looked after the owners' interests during construction.

The rivets of the Watt were furnished by the Upson Nut Co., of Cleveland, which has worked up an extensive business in this line. The boats turned out from the Wheeler yard are also riveted with the Upson Nut Co.'s rivets.

GEORGE STEPHENSON.—At West Bay City was launched Wednesday, the 23rd inst., the steamer building for the Bessemer Steamship Co., by F. W. Wheeler & Co. She measures 428 feet over all and 408 feet between perpendiculars by 48 feet molded beam and 28 feet molded depth. She is built on the cellular system, the water bottom being 66 inches deep at the center, and divided by center keelsons and solid floors into six compartments. She will have main deck beams but no laid deck, except at the forward and after ends. The boilers are to be placed on the main deck aft, and will sit fore-and-aft, but in a row athwartships, the fire-room being forward of the boilers. The engines will be operated from a platform below the main deck. The boiler house is to be of steel, and the coal bunkers, located forward of the boilers, will also be of steel, carried up to the height of the boiler and deck-house aft. There will be a forecastle deck forward, and a steel deckhouse and pilot house forward. She will also have a deck house aft on the spar deck, but the galley and dining-room will be located on the main deck aft. Accommodations for the crew will be in the after deck house and in the top-gallant forecastle. The height between decks is 10½ feet. The hold will be divided by three screen bulkheads, depending from the spar deck.

The spar deck is to be of steel, without covering, except inside the houses and on the forecastle deck forward. She has two masts, without gaffs or sails, and 12 cargo hatches, spaced 24 feet centers.

The provisions as to quality of material are practically the same as those applying to the other steamers of the fleet, all plating to be of mild open-hearth steel, of a tensile strength of not less than 52,000 nor more than 64,000 pounds to the square inch; limit of phosphorus, .08; elongation not less than 24 per cent in eight-inch test pieces, and reduction not less than 45 per cent. All shapes that are furnace-shaped also of open-hearth steel, and other shapes of open-hearth of Bessemer steel, builders' option.

The main engine is to be of the vertical, triplex type, with cylinders 25, 40 and 67 inches diameter by 44 inches common stroke. The main valves on the high and low-pressure cylinders are of the piston type, with a double-ported slide valve for the inermediate, all to be worked by the double-bar, Stephenson link motion, with adjustable cut-off. The cylinders are lagged with sheet steel. The bed-plate is of iron, cast in one piece, of box section, and the main journal boxes are of cast iron, fitted with anti-friction metal. The three rear columns are of box section. The crank-shafts and also the propeller shaft.

Steam will be furnished from three Scotch-type boilers, 13½ feet in diameter, and 12½ feet in length. Each boiler contains three furnaces of 43 inches diameter, the heating surface of each boiler being about 2,400 square feet. The working pressure is 175 pounds. The furnaces will be fitted with the Etna shaking grate bars, and a hydraulic ash ejector is another important feature. A double smoke-stack will rise to a point about 60 feet above the grate bars. The boilers will be covered with the best quality of sectional asbestos, and this will be covered with galvanized iron. The propeller wheel is 13½ feet in diameter by 17½ feet pitch. The Stephenson's capacity will be about 4,000 gross tons of cargo and 100 net tons of fuel on 1 ½ feet draft.

The Stephenson's auxiliary machinery includes the usual complete electric lighting plant, a steam windlass on the main deck forward, a reversible steam capstan aft on the spar deck, and two deck capstans between the forward and after deck houses, all these being furnished by the American Ship Windlass Co.; also one double cylinder (6x8) steam hoisting engine. The steering gear consists of one combined hand and steam steering engine, located aft on the main deck, with the handling wheel in the pilot house forward. She is expected to leave the yard complete in a little more than two weeks.

LAURA S.—The launch of a very handsome steam yacht took place at E. W. Heath's shipyard at Benton Harbor last Saturday afternoon. The yacht was built for M. J. Steffens, the well-known photographer of Chicago. The honors of christening were done by Miss Anna Coghlan, a relative of Rose Coghlan, the actress, who named the new steam yacht the Laura S.

GENERAL REPAIR WORK.

CLEVELAND.—The steamer Yakima is in the Cleveland dry-dock for repairs to her stern bearing. The W. H. Gilbert was in dock early this week to tighten her wheel.

The schooner Anna M. Ash, which was out in the gale, is in the Ship Owners' dry-dock having her bottom entirely recalked. The W. D. Rees is still in dock, but will probably finish repairs by Saturday night. It was found necessary to remove another plate, making 14 in all.

CHICAGO.—At the Chicago Ship Building Co.'s yard the steamer Waverly was in dock for a new stern and some bottom calking; the steamer Raalte for general repairs and bottom calking; the barge Middlesex for bottom calking and repairs. The schooner Golden Age received some calking and a new main gaff.

At Miller Bros.' shipyard the steamer City of Charlevoix was in dock and had her butts recalked, wheel refastened and repairs made to stern bearings. The schooner Hattie Hutt is in to have her bottom inspected, and the steamer William J. Averill is in having leaks stopped.

BUFFALO.—The cripples are again creeping up to the dry-docks, after an off season. The Monteagle is being surveyed by Capt. C. E. Benham and George McLeod. The St. Louis is rebuilding in the Mills' dock, and the Hope is in getting a new wheel and a new stern post, and repairs to her stern pipe, which are additions to the broken wheel that were not discovered until after she entered the dock. The Hudson has also been docked for a new wheel.

REPAIR NOTES.

The barge Emerald received a new starboard bow at Leathem & Smith's dock, Sturgeon Bay, last week.

Ives Bros., of Sturgeon Bay, made a new brass cross-head gib weighing 28 pounds for the engine of the steam-barge Pewaukee, which was put in last week.

Lake Michican car transfer No. 4, which was built at Craig's shipyard, Toledo, this year, is at South Chicago, where a towing machine is being installed.

The new engine building for the Fannie C. Hart by the Manistee, Mich., Iron Works, will be ready by October 1.

Mr. James Graham, of Detroit, was visiting Lake Erie ports last week in the interests of his fueling dock, foot or Twenty-first street, Detroit. Mr. Graham states that business is very dull, but not much more so than in other lines. He has been calling the attention of owners to the especial advantages and conveniences afforded by his dock.

Beeson's Marine Directory for 1896is the tenth annual edition of the work, which is widely quoted as a book of reference and an authority on vessel classification.—Chicago Tribune. For sale at MARINE RECORD Office, Western Reserve Building, $5.

HOW TO LAY DOWN A SHIP.

The drawing boards are of very large size, as the designs are got out to a scale of $\frac{1}{16}$ to $\frac{1}{4}$ inch to a foot, and as many of the vessels are from 500 to 600 feet long, the drawings are of great length. The boards are stiffened by a longitudinal rib at the back, and the T squares are used across the board instead of longitudinally. A rough sketch design is first got out, this is then sent into the model room, where a half model of the hull is then made. This is fixed to a board and sent back into the drawing office, and there a draughtsman sets off the positions of the frames upon the back board, and then in the model shop these lines are scribed vertically on the model. The whole of the lines representing deck and plating are then marked off upon the wooden model, and the draughtsman proceeds to set off the plates in such a way as to break joints as much as possible with others in adjoining strakes. Designs are then prepared, showing how the various strakes run, and each strake is lettered and marked "in" or "out," as the case may be. When the hull is to be built of mild steel, and the dimensions for thickness are always given in twentieths of an inch, whereas for wrought iron, dimensions are given in sixteenths. In examining a set of drawings which were in hand, the garboard strake plates were figured $\frac{21}{20}$, the sheer strake $\frac{21}{20}$, and the bilge, $\frac{18}{20}$ to $\frac{17}{20}$, while the frames were 7 inches by 3½ inches by $\frac{11}{20}$ inches; the longer plates were about 28 feet. The whole of the original drawings are stretched and glued to the drawing boards, and the shop tracings are made on cloth and colored and fully dimensioned.

The mold is one of the most important parts of the works. Here the floor is well laid, and upon it are fixed immense boards especially made for each vessel. The drawings, prepared in the drawing office to a scale of ¼ inch to a foot, are brought here, and the whole of the lines representing the curves of the frames and plates are laid down full size. At first the lines are merely chalked out with the aid of long, pliable straight edges, and then these lines are cut into the wood itself by hand with a knife. Each of the various sweeps is figured so as to correspond with the drawing, these processes being known as "screeving." The floor is thus covered with a maze of curves and straight lines, and when complete, the whole floor is taken up and carried into the plating shed, where it is pieced together again. We now reach the plates shop, and here will be seen the screeving boards carefully laid down on the floor. Upon the surface of the boards are screwed pieces of half-round iron, so that the surface may not be burnt when hot templates are tried on. A template consisting of bar iron about 2 inches wide by ½ inch thick is now bent to fit each one of the curves on the screeve board, and these templates are fixed upon the large face plates and the frame channels are bent to fit them. A gang of special smiths is kept for this work, the holes in the frames having all been drilled before they go into the furnace. Long channel irons are heated in special furnaces with six furnaces down the sides, so as to obtain an equable heat over the whole length of the frames.—The Engineer, London.

COOLER STEAMER STOKEHOLDS.

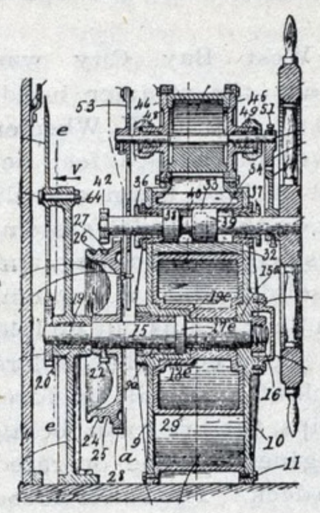
An English firm, as a result of numerous experiments, has designed an ingenious arrangement for the cooling and ventilation of stokeholds in steamships. The arrangement may be described as follows: Compressed air enters the ventilators through a narrow nozzle, similar to the cone in an injector, and is then mixed with a small proportion of steam coming in by a wider opening. The high velocity of the air from the conical muzzle causes the air and steam to be well blended in the large chamber of the apparatus, from which, when it is necessary to cool the air, the air and steam are led through an aperture to a distributor; or, when atmospheric conditions warrant it, the steam alone or air alone can be dealt with in this manner. A valve at the other end of the chamber is opened proportionately to the amount of moisture required, and part of the steam in the chamber enters a coil or condenser terminating in a drip pipe, in reaching which the steam is condensed to water, and subsequently is pulverized to vapor when passing through the distributor already referred to. By this means the hot dry air which is being driven down the trunks absorbs the vapor and undergoes cooling to an extent which is easily regulated by adjusting the valve at the end of the chamber. The main casing of the apparatus is surrounded by a thickness of asbestos, and to complete the lagging an outer case is provided.

DREDGING AT WAUKEGAN.

Capt. George A. Zinn, Corps of Engineers U. S. A., opened bids at Milwaukee, on Wednesday, the 16th, for dredging in Waukegan harbor. The amount of the appropriation available is $15,000, and the estimated amount of dredging 122,000 cubic yards. The Green Dredging Co., Chicago, bid 9c per cubic yard; Charles Berner, Green Bay, 10½c; William A. Starke, Milwaukee, 9c; Racine Dredging Co., Racine, 9½c; Arthur H. Vogel, Milwaukee, $8\frac{6}{10}$; Illinois Dredging Co., 8c. The last named will undoubtedly get the contract.

ANOTHER NEW STEERING GEAR.

Mr. Daniel L. Volker, of Buffalo, has obtained a patent (No. 567,327) on a steering gear for vessels, for which he filed application September 16, 1895. The gear consists of a cylindrical case, having an annular space in which the piston operates. The plan is for the combination with a stationary dividing portion located in said annular space, and having an opening through it communicating with the annular space at each side of the piston, of a shaft mounted within a transverse opening through the dividing portion and carrying steering wheel at its front end, and means located within the transverse opening mounted on said shaft, so as to be operated by the steering-wheel for opening and closing communication between the annular space and the piston.



The claim is, second, for the combination with the pulley to which the chains or cables are connected for operating the tiller and rudder, of an arm rigidly connected to the valve stem, a connecting-rod connecting with the steam-valve and with an arm on the valve-stem, an extension from said valve-stem arm and a pin extending out from the inner side of the cable pulley whereby the steam is shut off and the motion of the piston is stopped automatically at the end of each stroke.

The claim is, third, for the combination with the cylinder case of a shaft having one end mounted in one cylinder head, means for preventing it from being drawn therefrom, an inward-projecting sleeve extending from the opposite cylinder head, having an inside surrounding flange through which the opposite end of the shaft passes, and an enlargement on said shaft adapted to engage with the inside flange, for preventing the cylinder-heads from spreading.

BEESON'S MARINE DIRECTORY FOR 1897.

I desire to announce to my former subscribers, advertising patrons and friends, that the tenth regular annual edition of Beeson's Marine Directory will come from press on or about May 1, 1897, as usual, and in all respects it will be complied and conducted along the same lines that have made it an ever-growing success, as is best attested by its annually increased circulation and the steady growth of its advertising patronage. Catering to the wants of the merchant marine and the trades allied thereto for the past ten years, I feel warranted in saying I am in a position to know what is demanded in the way of a directory of value to marine men, and no expense will be spared to make this tenth edition of the work superior to its predecessors, which have already won for the work the universal approval of the press and public. Long established and with every facility for putting forth a work of increased value, I offer more to subscribers and advertising patrons than it is possible to get in any similar marine publication now projected.

HARVEY C. BEESON.

Capt. William Crumb has been released as master of the tug E. G. Crosby, of the Lake Michigan Car Ferry Transportation Co.'s Line. N. S. Randall, of the Perrett, is in temporary command.

A REPORT OF EXPERTS.

MR. FRANK S. MANTON, Agent American Ship Windlass Co., Providence, R. I.

Dear Sir: We the undersigned, having been appointed by you to investigate and report upon the Shaw & Spiegle Patent Automatic Towing Machine, after a careful examination of the machine as fitted in a number of lake steamers and barges, and of such testimony as we have been able to obtain from the masters of such vessels, beg to submit the following report:

We understand that the purpose of our investigation was primarily to ascertain if the use of this machine increased in any degree the safety of towing large barges, and not to pass upon the question of the economy or efficiency of the machine. We have, therefore, not given special attention to these latter questions, but lest silence on these points may lead to any misunderstanding and do the machine an injustice, we may say in passing that the testimony we have received bearing upon this is altogether in favor of the machine.

The principle and working of the machine may be most briefly described by quoting the words of the manufacturer.

"Its distinctive feature is that by means of its driving and cushioning steam cylinders there is provided an elastic steam machine without which the hawser would be continually straining and frequently breaking.

"Its principle and mode of working.—The resistance of the tow barge is borne entirely by the steam pressure in the cylinders. The wire hawser is wound on a drum that is driven by a pinion gear on the crank shaft of the engine, which meshes with the gear on the drum shaft. This machine has a regulating, reducing steam valve in which the opening is increased or diminished, according as the strain of the hawser increases or dimishes. The action of the machine is as follows: In a seaway as the vessel pays off, thus increasing the strain on the hawser, the drum begins to revolve and to pay out the hawser. This action opens the regulating valve and increases the steam pressure in the cylinders until the pressure is sufficient to equal the strain. Then if the strain decreases on the hawser, the pressure in the cylinders will revolve the drum and wind the hawser in. In this way the machine is prevented from paying out the whole of the hawser, and only enough is paid out to relieve the extra and momentary strain on the hawser, and thus prevent its injury or its breaking.

"The regulating valve is entirely automatic and requires no handling whatever. An independent admission valve is provided, by which steam may be admitted to the cylinders and the hawser lengthened or shortened at the will of the operator."

Our investigations have satisfied us that this description may be accepted as accurate and trustworthy.

From the underwriters' standpoint the objection of towing large and heavily loaded vessels by ordinary methods is the liability of the towing line or its connections to part upon a sudden strain being brought upon it, leaving the vessel towed practically helpless for a time, even if provided with efficient masts and sails. With this machine, on the contrary, the towing hawser is run out by automatic action until such a strain is relieved, when the hawser is drawn in by the same means. The testimony that such is the action of the machine in practice is uncontrovertible.

It is therefore our opinion that the ordinary dangers incidental to towing are materially lessened by the use of this machine and believe it to be entitled to the consideration of underwriters.

SINCLAIR STUART,
Surveyor to the U. S. Standard Register of Shipping, New York.

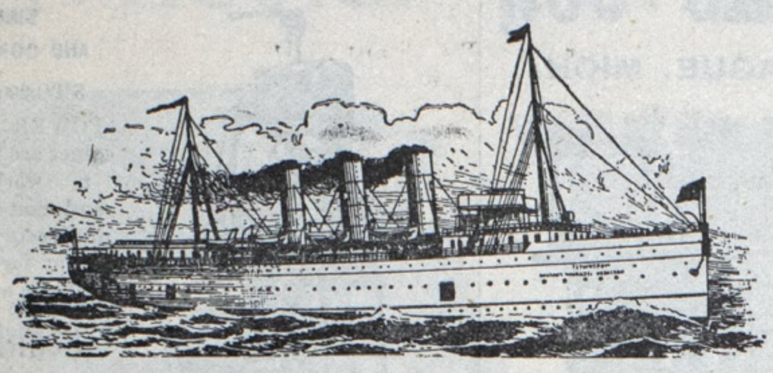
ROBERT LOGAN,
Naval Architect and Consulting Engineer, Cleveland.

EDWARD GASKIN,
Superintendent of the Union Dry Dock Co., Buffalo.

PROPOSALS.

U. S. ENGINEER OFFICE, Duluth, Minn., Sept. 20, 1896. Sealed proposals for rip rap embankment at Agate Bay (Two Harbors), Minn., will be received until noon, Oct. 20, 1896, and then publicly opened. Information given on application. CLINTON B. SEARS, Maj. Engrs. 39–42

GRAHAM'S RAPID FUELING DOCKS,



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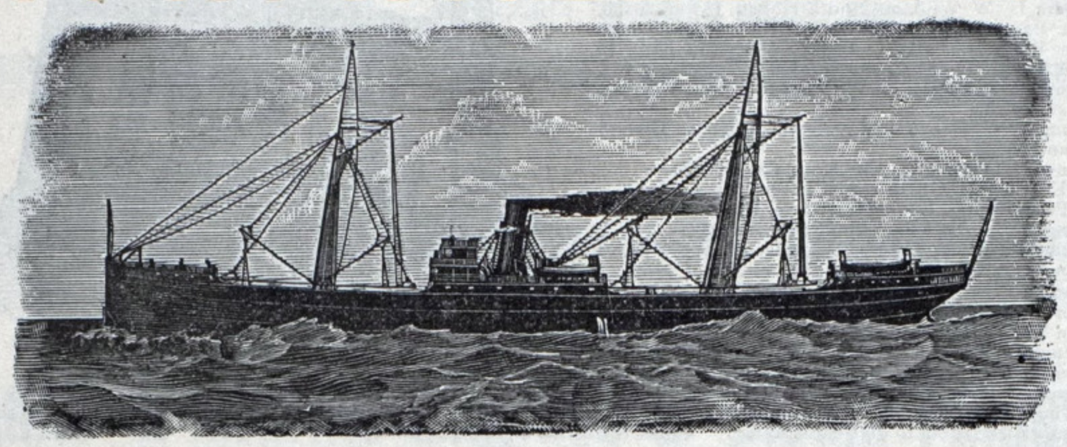

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MARINE ENGINES,

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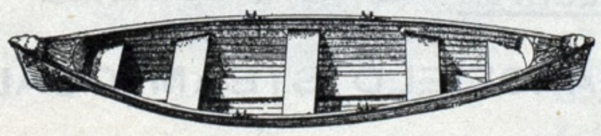

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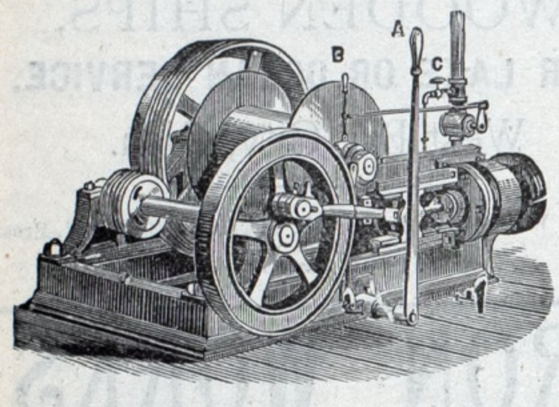

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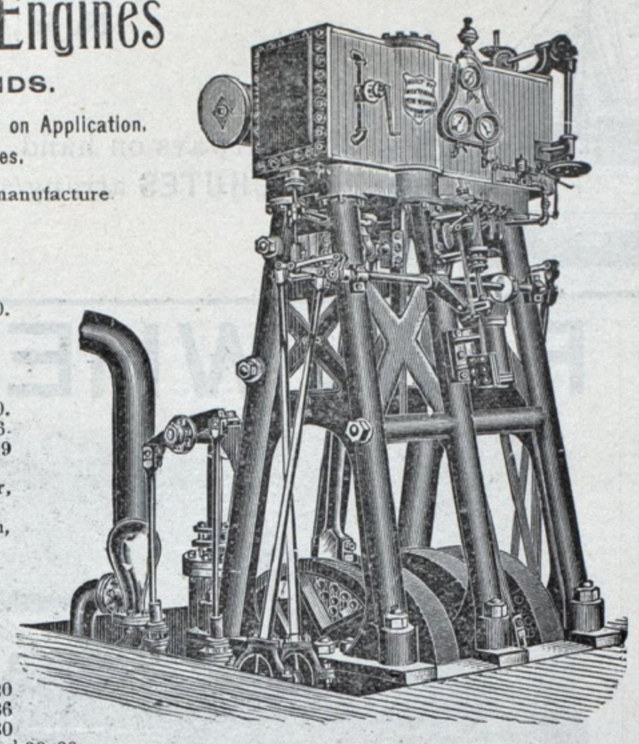

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Steam Barge M. T. Greene, Chicago, 20 and 36x36.
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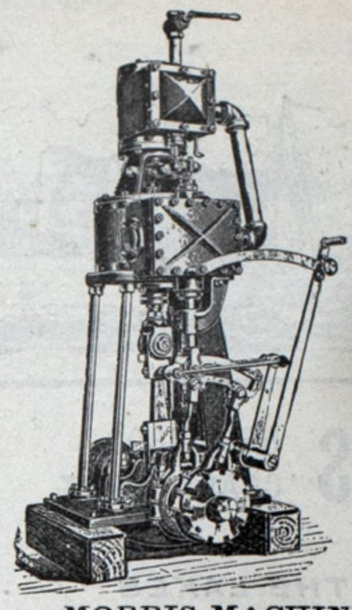

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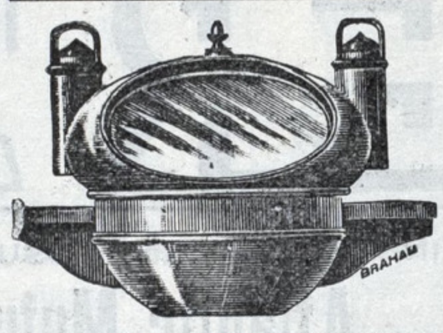

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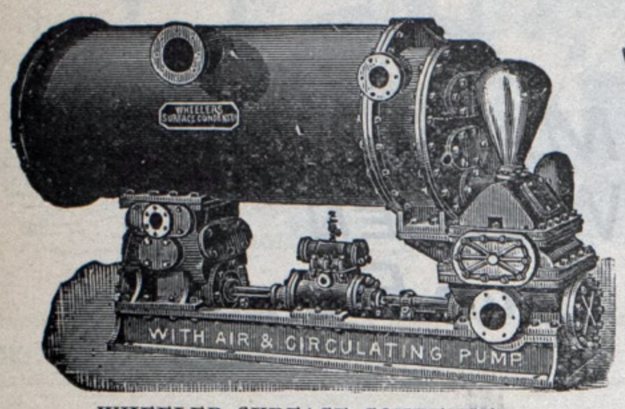

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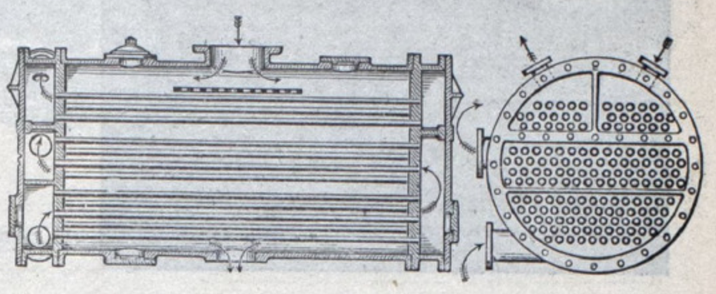

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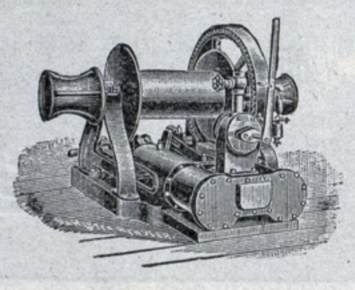

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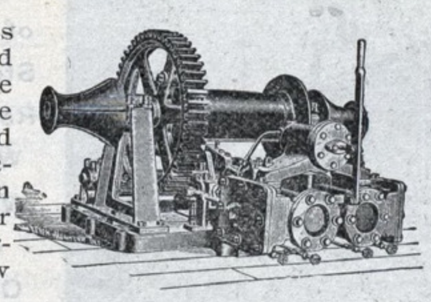

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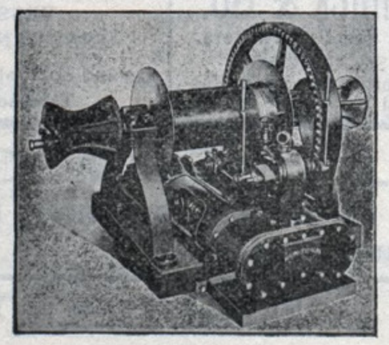

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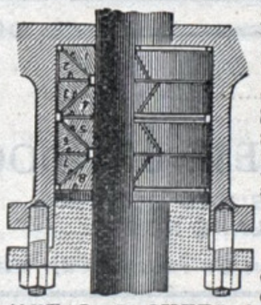

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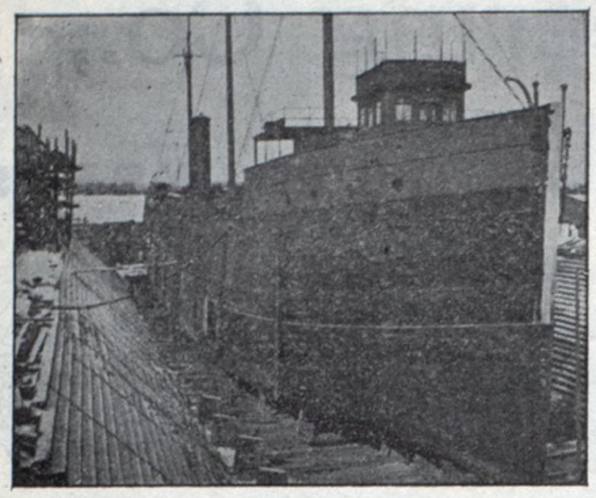

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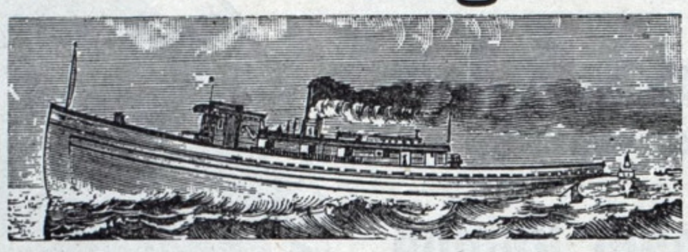

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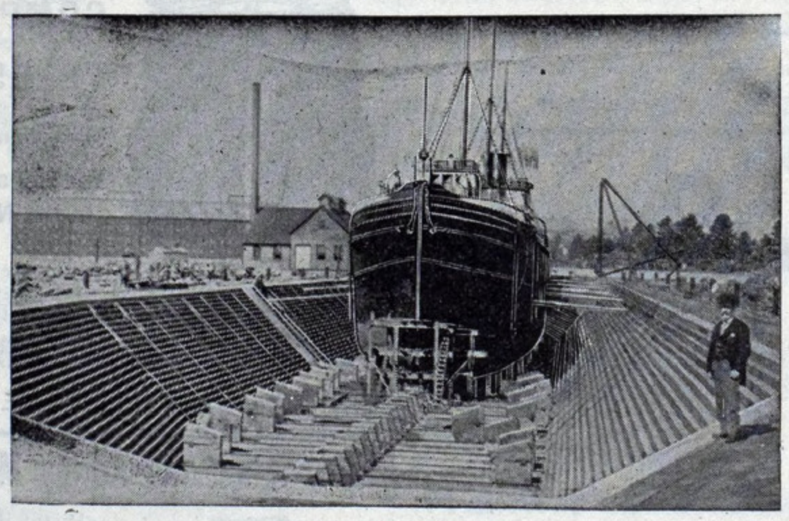
PHOTOGRAPH OF 300 FT. BOAT IN DOCK.

Plates and Material Always on Hand to Repair all kinds of Metal Ships in Shortest Time.



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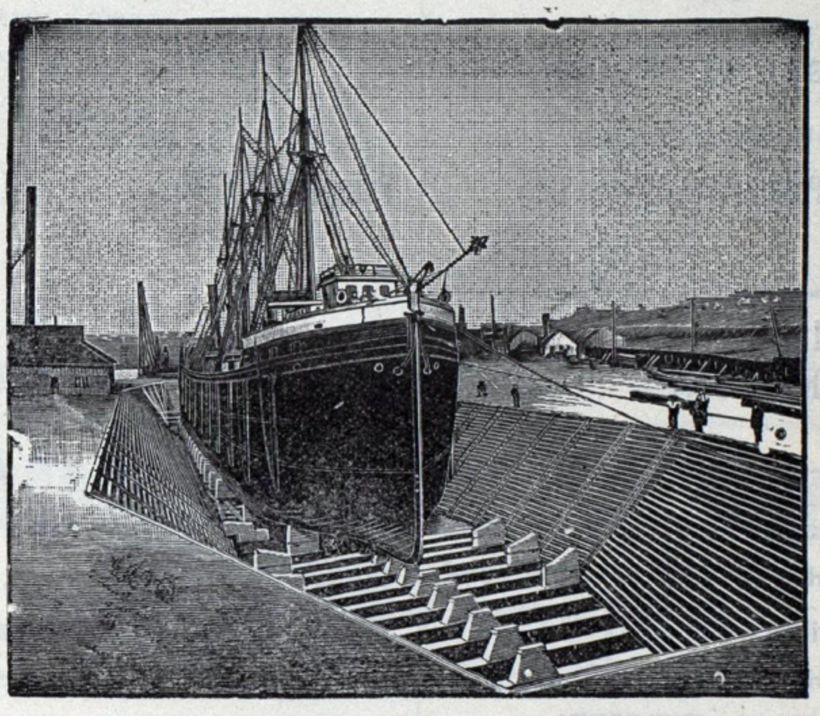

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